

## ABSTRACT OF THE INVENTION

**[0053]** A method and apparatus of coating a polymer solution on a substrate such as a semiconductor wafer. The apparatus includes a coating chamber having a rotatable chuck to support a substrate to be coated with a polymer solution. A dispenser to dispense the polymer solution over the substrate extends into the coating chamber. A vapor distributor having a solvent vapor generator communicable with the coating chamber is included to cause a solvent to be transformed into a solvent vapor. A carrier gas is mixed with the solvent vapor to form a carrier-solvent vapor mixture. The carrier-solvent vapor mixture is flown into the coating chamber to saturate the coating chamber. A solvent remover communicable with the coating chamber is included to remove excess solvent that does not get transformed into the solvent vapor to prevent the excess solvent from dropping on the substrate.